CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER 93 – 159

WATER REUSE REQUIREMENTS FOR:

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT, ZONE 7 ("Zone 7")
CITY OF LIVERMORE ("Livermore")
DUBLIN SAN RAMON SERVICES DISTRICT ("DSRSD")
(together, hereinafter called "permittees")

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Board) finds that:

1. The permittees submitted a Report of Waste Discharge, dated December 1,1993, and a technical engineering report titled *Livermore-Amador Valley Water Recycling Study* (May 1992) in support of their permit application for issuance of water reuse requirements.

2. These master water reuse requirements authorize the permittees to produce and distribute recycled water of specified quality to customers throughout the Livermore-Amador Valley (Valley) in accordance with a Salt Management Program for protecting, improving and enhancing Valley groundwater quality. Institutional arrangements for distributing recycled water within, and where feasible outside the Valley, will be determined by the affected permittees and customers.

   This permit identifies two phases and three categories of water recycling projects for specific and defined purposes and requires the development and submittal of technical reports for Executive Officer approval before reuse under each category will be authorized. These categories include:

   a. Phase I small-scale irrigation projects.

   b. Phase I small-scale groundwater recharge demonstration projects.

   c. Phase II valley-wide irrigation projects, other nonpotable reuse projects, and additional groundwater recharge projects using well injection or surface spreading.

3. Water Code section 13510 states that the people of the state have a primary interest in the development of facilities to reclaim water containing waste to supplement existing surface and underground water supplies and to assist in meeting the future water requirements of the state.

   Section 13511 states that a substantial portion of the future water requirements of this state may be economically met by beneficial use of recycled water. Use of recycled water constitutes the development of "new basic water supplies".

   Section 13512 states that the state should undertake all possible steps to encourage development of water reclamation facilities.

   Section 13550 states that the use of potable domestic water for nonpotable uses, including, but not limited to, cemeteries, golf courses, parks, highway landscaped areas, and industrial and irrigation uses, is a waste or an unreasonable use of the water, if recycled water of adequate quality is available at reasonable cost.

   Section 13551 states that a person or public agency shall not use water from any source of quality suitable for potable domestic use for nonpotable uses, including cemeteries, golf

courses, parks, highway landscaped areas, and industrial and irrigation uses, if suitable recycled water is available as provided in Section 13550.

Section 13576(e) states that the use of recycled water has proven to be safe from a public health standpoint and that the State Department of Health Services (DHS) is updating regulations for the use of recycled water.

4. The Basin Plan (Finding 16) supports reclamation and further states that the disposal of wastewater to inland, estuarine or coastal waters is not considered a permanent wastewater disposal solution where the potential exists for conservation and reclamation.

5. Projects subject to federal NPDES requirements are not authorized under this permit. This permit solely identifies the technical reports necessary to support a future NPDES permit application. Groundwater recharge or conveyance via ephemeral streams or waters of the State is an essential component of the proposed valley-wide, year-round water recycling and groundwater quality management program. The Board will consider issuing a separate NPDES permit to the permittees for the above purposes following receipt of a complete NPDES application.

6. Zone 7 serves as the overall water quality management planning agency for the Alameda Creek Watershed above Niles and is responsible for the management of the Valley's surface water and groundwater resources. Zone 7 will serve as the lead agency for administering the permit and ensuring that water recycling projects are implemented and managed in accordance with permit conditions and an approved Salt Management Program.

   Livermore and DSRSD provide water supply and wastewater treatment services within their service areas and will be the recycled water producers. Decisions regarding new treatment and distribution facility construction, operation, funding, cost-sharing and related aspects will be under the purview of the permittees and affected customers.

   Zone 7 wholesales groundwater and surface water (primarily State Water Project water) to the Cities of Livermore and Pleasanton, DSRSD, the California Water Services Company (Cal Water), Camp Parks, Alameda County's Santa Rita facility, and the Veterans Administration Hospital. Lawrence Livermore National Laboratory, Castlewood and the Sunol area are served by the San Francisco Water Department (SFWD).

   The principal retail water service agencies (primary customers) who therefore also have authority under the provisions set forth in this Order to purvey recycled water within their respective jurisdictions include Cal Water, City of Pleasanton, City of Livermore, and DSRSD. Future projects may include deliveries to EBMUD, SFWD, and other purveyors and customers within their respective service areas.

   Wastewater in the sewered eastern portion of the Livermore-Amador Valley is currently treated at the 8.5 mgd design capacity Livermore Water Reclamation Plant subject to NPDES permit CA0038008 (Order No. 89-100). Wastewater in the sewered western portion of the valley is treated at the 11.5 mgd design capacity Dublin San Ramon Services District (DSRSD) Wastewater Treatment Plant subject to NPDES permit No. CA0037613 (Order No. 89-99).

   Both the Livermore and DSRSD treatment plants produce high-quality secondary effluent and have documented long-term records of reliably meeting discharge standards. Both treatment plants have active industrial source control programs that meet the requirements of 40 CFR 433 and effectively control the discharge of potentially toxic substances by local industries.

7. Livermore has irrigated or supplied recycled water for irrigation in the vicinity of the Livermore Water Reclamation Plant since 1967. Under Regional Board Order No. 90-102, Livermore presently recycles approximately 450 AFY filtered effluent to irrigate approximately 200 acres at the Las Positas Golf Course, 2.5 acres at the Livermore Municipal Airport and 6 acres at the treatment plant. Existing, but currently unused, piping exists to supply recycled water to CALTRANS for irrigation of highway medians and shoulders.

Livermore mitigates the salt loading resulting from recycled water use by diverting flows high in TDS from an unnamed tributary to Altamont Creek to its collection system. Livermore continues to investigate other options for mitigating TDS loading.

8. DSRSD currently delivers approximately 10 AFY to the City of Pleasanton for irrigation of the I-680/Stoneridge Drive interchange under Regional Board Blanket Order No. 91-042. Approximately 2.5 acres of landscaping at the DSRSD wastewater treatment plant site has been irrigated with recycled water since about 1961. DSRSD is actively pursuing expansion of its water recycling activities, including additional highway irrigation along I-580 (sponsored by the North Pleasanton Improvement District (NPID)). As mitigation for salt loading from this additional recycling, NPID has made funds available to Zone 7 to assist in development of a Salt Management Program.

9. Board Order No. 91-042 provided "blanket" authorization for tanker-truck distribution of recycled water and the expansion of existing fixed-irrigation-system projects already subject to water reuse requirements. Prohibition A.6 of Order No. 91-042 requires Executive Officer approval for use of recycled water in areas overlying Livermore-Amador Valley groundwater basins. Both Livermore and DSRSD have obtained this approval and provide recycled water to local contractors for tanker-truck distribution.

10. Livermore and DSRSD are member agencies of the Livermore-Amador Valley Water Management Agency (LAVWMA). Since 1980, wastewater has been exported from the valley via LAVWMA operated facilities that connect to an East Bay Dischargers Authority (EBDA) interceptor in San Leandro and discharge via the EBDA outfall to Lower San Francisco Bay west of the Oakland Airport. The LAVWMA discharge through the EBDA system is regulated under the EBDA/LAVWMA permit, NPDES No. CA0037869 (Order No. 89-098).

    The LAVWMA pump station can export up to 21.0 mgd of treated wastewater, or 1.3 mgd more than its permanent and firm contracted capacity of 19.7 mgd in the EBDA system. LAVWMA is allowed to discharge up to 1.3 mgd of treated wastewater to San Lorenzo Creek during peak wet weather periods when EBDA capacity is exceeded pursuant to NPDES Permit No. 0038769 (Order No. 90-125).

11. LAVWMA, EBMUD and Caltrans were issued Order No. 93-070 on July 21, 1993, allowing the reuse of Valley exported treated wastewater for irrigation of median and shoulder areas of Interstate 580, Interstate 880 and State Route 238.

12. The Board, as stated in the Basin Plan (Finding 16), has been concerned for decades over the need for an overall water-wastewater management plan for the Valley. The 1982 Zone 7 Wastewater Management Plan (incorporated into 1986 Basin Plan) provided a portion of such a plan for unincorporated areas of the Valley. The 1992 *Livermore-Amador Valley Water Recycling Study* identified the framework for a more comprehensive Valley-wide water recycling plan.

13. The *Livermore-Amador Valley Water Recycling Study (Study)* documented the hydrogeology of the Valley groundwater basin and current water supply and wastewater disposal practices, impacts, and constraints. The report described how water recycling projects; would be incrementally implemented throughout the valley, would comply with Basin Plan requirements and Zone 7 policies, and would maintain and enhance overall groundwater quality in accordance with a basin-wide Salt Management Program (SMP) (Provision D.1.c.ii).

14 Among the conclusions of the *Study* are the following:

- Well-established technologies and procedures exist for reusing and recharging between 19,000 and 38,000 acre-feet per year (AFY) of recycled water within the Livermore-Amador Valley without impairing public health or water quality.

- Zone 7 has identified a need for 20,000-25,000 AFY of additional water supply within the next 10-15 years. The recommended water recycling projects could provide a large

portion of this supply depending on the combination of water recycling projects implemented.

- Valley wastewater export disposal capacity is limited to 21 mgd and is projected to be exceeded within the next 10-15 years. Wet weather disposal capacity may be exceeded sooner. Some viable groundwater recharge water recycling projects could also provide additional year-round wastewater disposal capacity.

- Water recycling projects including reverse osmosis demineralization and export of brine could significantly improve groundwater quality and the import-export balance for dissolved salts in the valley's groundwater resources.

- A combination of projects using both demineralized and non-demineralized recycled water for irrigation, groundwater recharge and other beneficial uses is the most cost-effective approach to obtaining the benefits of water recycling.

15. Water recycling is an essential part of an overall program to manage the Livermore-Amador Valley's water resources. The permittees' governing bodies have adopted resolutions establishing their intent to proceed with the planning, permitting, and implementation of valley-wide water recycling projects. These projects would provide important multiple water quality, water supply, and wastewater disposal benefits for Valley residents including:

    - augmentation and improved reliability of the Valley water supply.
    - reduction of the mass of pollutants discharged to San Francisco Bay.
    - reduction in size or deferral of the need for additional wastewater export facilities.

16. The Livermore-Amador Valley is a closed groundwater basin within the Alameda Creek watershed with multiple groundwater subbasins of variable water quality. The main portion of the Central Basin (that portion underlying Livermore and Pleasanton) has the highest quality, supplies most of the municipal wells in the area, and is used to store and distribute high quality imported water.

    The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) in September 16, 1992. The beneficial uses of the Valley groundwater basin areas as identified in the Basin Plan are:

    - Industrial Service and Process Supply
    - Municipal and Domestic Supply
    - Agricultural Supply

    Alameda Creek and its tributaries are used for recharge of the Livermore-Amador Valley ground water basin as well as a channel for conveyance of South Bay Aqueduct (SBA) release water to the Niles Cone ground water basin for recharge. During dry weather, creek flow primarily consists of SBA release water. The beneficial uses of Alameda Creek identified in the Basin Plan are:

    - Agricultural Supply
    - Groundwater Recharge
    - Water Contact Recreation
    - Non-Contact Water Recreation
    - Warm Fresh Water Habitat
    - Cold Fresh Water Habitat
    - Wildlife Habitat
    - Fish Migration
    - Fish Spawning

    Water Code Section 13240 requires the Board to formulate, adopt, and periodically review Basin Plans which identify beneficial uses of all ground and surface waters of the Region and establish water quality objectives that ensure reasonable protection of the beneficial uses.

Section 13241 states that it may be possible for the quality of water to be changed to some degree without unreasonably affecting beneficial uses. Factors that the Board must consider when establishing or amending water quality objectives include, but are not limited to:

(a) Past, present, and probable future beneficial uses of water.
(b) Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto.
(c) Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area.
(d) Economic considerations.
(e) The need for developing housing within the region.
(f) The need to develop and use recycled water.

17. Basin Plan Table III-3 lists surface water and groundwater quality objectives for the Alameda Creek Watershed above Niles. The current surface water objectives for Alameda Creek and its tributaries, adopted in 1975, were set primarily to prevent degradation of released South Bay Aqueduct water by wastewater discharges (during SBA water transmission and recharge in the Valley and the Niles cone) and also thereby protect groundwater quality. The surface water objectives, based on a several year average of SBA water quality are as follows:

Surface Water Quality Objectives (Alameda Creek and Tributaries):

TDS:	250 mg/l 90-day arithmetic mean
	360 mg/l 90-day 90th percentile
	500 mg/l daily maximum
Chlorides:	60 mg/l 90-day arithmetic mean
	100 mg/l 90-day 90th percentile
	250 mg/l daily maximum

18. Water quality objectives for the groundwater basins were developed by Zone 7 in its 1982 Wastewater Management Plan and incorporated into Basin Plan Table III-3 as follows:

Groundwater Quality Objectives
(not to be exceeded more than 10% of the time during one year)

Central Basin

TDS:	Ambient or 500 mg/l, whichever is lower
Nitrate:	45 mg/l (10 mg/l NO_3-N)

Fringe Subbasins

TDS:	Ambient or 1000 mg/l, whichever is lower
Nitrate:	45 mg/l (10 mg/l NO_3-N)

Upland and Highland Areas

California Administrative Code, Title 22, and county standards

19. The Basin Plan states the Board's intent to use Zone 7's 1982 Wastewater Management Plan general policy and policy for community wastewater systems as guidance in developing waste discharge requirements for dischargers in the Valley. These polices were incorporated verbatim into the 1986 Basin Plan and are contained in the current (September 1992) Basin Plan Implementation Plan.

Attachment 1 to this permit, excerpted from the *Study*, (Finding 13) documents how the Valley-wide water recycling program will comply with each policy. Applicable portions of the Basin Plan and Zone 7 policies include:

"The quality of the ground water in the Central Ground Water Basin should not be allowed to be degraded by controllable factors. All wastewater treatment and disposal facilities shall be planned, located, scheduled for construction and operated so as to maximize the export of salt and to minimize salt and other pollutant loadings in the Central Basin.

"To the extent possible and reasonable wastewater should be treated and disposed through the existing systems with export of effluent.

"If additional export is not feasible, limited land application may be an alternative. Land application will be considered only after a feasibility study by Zone 7, or another entity, finds export not feasible.

"However, wastewater treatment (which may include demineralization) with land application may be permitted if one of the following conditions is met:

a. The percolate (at the groundwater table) meets the ground water quality objectives and does not cause poor quality rising ground water to violate any water quality objectives.

b. The applied wastewater effluent has less than 250 mg/l TDS, does not cause any significant local problems, and does not cause rising ground water to create water quality problems in the Central Basin and Niles Cone areas.

c. The application point is in the fringe subbasin or upland and highland area, and it can be shown that the project, because of its size and location, together with other possible projects in the area, will not cause adverse water quality effects either locally or in the Central Basin or Niles Cone areas. The site-specific study will have to demonstrate that the percolate cannot reasonably be expected over time to move, either directly or indirectly, into the Central Basin or Niles Cone and degrade or pollute the groundwater. All other State and Federal standards must be met.

"Policies b and c above allow some degradation only when beneficial reuse of wastewater is proposed, as permitted in the State nondegradation policy. Land application will be discouraged in the Central Basin where salts, trace organics and viruses may cause problems."

The Zone 7 policies define land application to include direct disposal to land or ponds, and the use of effluent for irrigation or ground water recharge. The policies have generally been interpreted to require 250 mg/L recycled water (demineralization) for irrigation above the Central Basin, in large part given the uncertainties involved in measuring percolate quality at the groundwater table.

Imported surface water and groundwater can at times exceed the Zone 7 and Basin Plan 250 mg/L surface water and land application water quality objective. Under current conditions and with minimal water recycling, there is a net salt loading to the Central Basin of approximately 5,000 tons per year. Net salt loading occurs in non-drought as well as drought years. In 1991, averages (and ranges) for Valley Total Dissolved Solids (TDS) concentrations were:

- imported SBA surface water — 350 mg/L (213-447 mg/L)
- groundwater — 640 mg/L (425-983 mg/L)
- DSRSD final effluent — 730 mg/L
- Livermore final effluent — 800 mg/L

20. Chapter 6 of the *Study* (Finding 13), titled Compliance with Regulatory Constraints, documented how the proposed water recycling program would be conducted to comply with each of the Zone 7 policies in Finding 19 and other Basin Plan policies, prohibitions, and non-degradation requirements. A table from that report documents compliance in a point-by-point format and is made Attachment 1 to this Order.

21. The Basin Plan states that "wastewater discharges that cause the surface water limits in Table III-3 to be exceeded may be allowed if they are part of an overall water-wastewater resource operational program developed by the agencies affected and approved by the Board."

22. Implementation of a Basin Plan specified Valley-wide "water-wastewater resource operational program" incorporating demineralized and non-demineralized recycled water projects (as well as other groundwater-quality management strategies) provides the opportunity and means to actively manage and improve groundwater quality and supply.

23. The permittees propose to develop and implement a Salt Management Program (SMP) to regulate water recycling projects in compliance with the Basin Plan condition cited in Finding . The Program will detail how demineralized water recycling and other projects will be coordinated to fully mitigate increases in salt loading to the overall Central Basin due to recycled water use and to comply with the State Board Anti-Degradation Policy (Resolution 68-16).

24. The *Study* (Finding 13) reviewed Title 22 requirements and potential constituents of concern such as organics, viruses, and salts and documented how well-established treatment technologies are available and would be provided to fully comply with all requirements and to prevent adverse public health and environmental impacts.

25. Multiple examples of successful groundwater recharge and other potable reuse projects exist around the country. The long-operating Orange County Water District Water Factory 21 (WF-21) project has served as a model for many existing and proposed facilities. Other advanced treatment facilities in San Diego and Denver have demonstrated through extensive multiple year studies that recycled water can be produced which has equivalent or lower health risks than potable water.

    WF-21 injects blended recycled water into a seawater intrusion barrier and groundwater recharge system. The nearest WF-21 public water supply well has been receiving nearly 100 percent injection water, more than half of which is recycled water from WF-21. The well is 1800 feet from the injection wells and the travel time is calculated to be between 2 and 4 years.

    Extensive water quality monitoring by WF-21 for the past 18 years indicates no degradation of groundwater quality by chemicals or microorganisms of public health concern.

    The Department of Health Services (DHS) found that the capability of the WF-21 treatment process to adequately reduce viruses in the recycled water before injection has been demonstrated sufficiently. Frequent monitoring and proper operation according to an operating plan are necessary to assure removal of such non-routinely measured constituents as pathogens (including viruses and giardia).

    WF-21 was authorized in 1992 by the Santa Ana Regional Board and the DHS to inject up to 100 percent recycled water as an on-going research and demonstration project.

26. The DHS considers Total Organic Carbon (TOC) to be a reasonable surrogate measure of the trace organics present in wastewater after treatment. A Scientific Advisory Panel (SAP) assembled by the State of California to evaluate the recharge of groundwater with recycled water indicated in its 1987 report that reducing TOC to one mg/L or less would minimize concern about the presence of individual chemicals that could pose a threat to health. Proposed Title 22 groundwater recharge regulations limit TOC of wastewater origin to one mg/L in extracted groundwater.

27. Zone 7's near-term need for additional water supply, increasing demands on statewide supplies and the recent lengthy drought illustrate an urgent need to implement viable and environmentally sound recycled water groundwater recharge and irrigation projects.

28. Small-scale projects, when accompanied by rigorous monitoring, data collection, and management programs, are a safe and prudent first step toward implementing water recycling in the valley on a larger scale. Small-scale irrigation projects operated by the permittees and selected customers would provide each with the experience needed to effectively implement larger scale projects.

29. Small-scale demonstration groundwater recharge projects of up to one mgd average flow, producing water quality meeting proposed Title 22 and Basin Plan objectives, would provide valuable local experience and public involvement, allow collection of applicable data documenting predicted groundwater basin travel times and mixing characteristics, and facilitate future large-scale water recycling.

    Livermore has completed a feasibility study and preliminary design of a 0.75 mgd demonstration Advanced Water Reclamation Plant (AWRP) modeled after the intensely studied Orange County Water District Water Factory 21 (WF-21) reverse osmosis facilities, which began operation in 1976.

    Livermore has applied for State Revolving Loan Funding for the project which would be located at the existing treatment plant site. The project is eligible for funding under Class C, (projects necessary to comply with waste discharge requirements). Zone 7 has offered to pay Livermore for demineralized recycled water produced by the AWRP suitable for groundwater recharge.

30. Implementation of small-scale recycled water irrigation and groundwater recharge projects in a phased manner, concurrent with development of a Valley-Wide Salt Management Program (SMP), will enable a more rapid realization of the water-quality benefits promised by full-scale water recycling projects. Once the Valley-Wide SMP has been completed by the permittees and accepted by the Executive Officer, Phase I small-scale projects would become part of the Phase II valley-wide water recycling program and subject to the requirements of the Program.

31. To progressively implement water recycling in the Livermore-Amador Valley, potential projects have been divided into the following three groups:

    GROUP A: *Phase I small-scale irrigation projects.* Some of the projects that have been identified to date are listed below. As the valley-wide program develops, other similar projects may be identified and implemented, subject to Executive Officer notification and approval:

    City of Livermore (Las Positas Golf Course, Livermore Municipal Airport Livermore Water Reclamation Plant) (currently active)
    City of Livermore (Springtown Golf Course)
    Triad Business Park, Livermore
    Las Positas Community College, Livermore
    Dublin San Ramon Services District (Wastewater Plant) (currently active)
    CALTRANS interchanges and median areas:
        I-680/Stoneridge (currently active)
        I-580/Hopyard
        I-580/Hacienda
        I-580/Santa Rita
        I-580/Airway
        I-580/Portola
        I-580/N. Livermore Avenue
        I-580/Springtown

GROUP B: *Phase I small-scale demonstration groundwater recharge projects.* This group currently includes the project listed below. As the valley-wide program develops, other similar projects may be identified and implemented, subject to Executive Officer notification and approval:

> Groundwater recharge, through spreading or injection wells, of recycled water produced by the Livermore Demonstration Advanced Water Reclamation Plant.

GROUP C: *Phase II valley-wide projects.* This group includes any uses allowed under DHS Title 22 requirements, including commercial, industrial, or residential irrigation use, groundwater recharge through spreading basins or injection wells, or other uses, except drinking or food preparation. Projects involving discharge to surface waters of the State require a separate NPDES permit and are not authorized under this permit.

32. The proposed uses of recycled water will maintain and enhance natural resources, and thus enactment of this Order is categorically exempt from the provisions of the California Environmental Quality Act in accordance with Title 14, California Administrative Code, Chapter 3, Section 15307.

33. Section 13523 of the California Water Code provides that a Regional Board, after consultation with and receipt of recommendations from the California DHS and if it determines such action to be necessary to protect the public health, safety and welfare, shall prescribe water recycling requirements for water which is used or proposed to be used as recycled water. The use of recycled water for the purposes identified in Finding 31 could affect public health safety or welfare and requirements for those uses are therefore necessary in accordance with the California Water Code.

34. This Order's requirements conform with and implement the wastewater reclamation criteria of the California DHS (Title 22, Division 4, Section 60301-60355 of the California Code of Regulations) to protect the public health, safety and welfare.

35. The Board has notified the Permittees and interested agencies and persons of its intent to prescribe water reuse requirements.

36. The Board, in a public meeting, heard and considered all comments pertaining to this matter.

IT IS HEREBY ORDERED, that the Alameda County Flood Control and Water Conservation District – Zone 7, City of Livermore and Dublin San Ramon Service District shall comply with the following:

A. Prohibitions

1. The treatment, distribution or reuse of recycled water shall not create a nuisance as defined in Section 13050 (m) of the California Water Code.

2. No new water recycling projects shall be initiated prior to submittal of the technical reports specified in the respective provisions below, and approval by the Executive Officer, and where specified, the Department of Health Services.

3. Water recycling projects shall not include the discharge of treated wastewater to surface waters of the State. If the permittees seek to apply for future approval to implement such projects, they shall initiate the process by providing the NPDES documentation described in Provision 2.

B. Recycled Water Use Limitations

1. Use of recycled water shall be part of an "overall water-wastewater resource operational program" (as provided in the Basin Plan) designed to prevent degradation of groundwater resources within the basin.

2. The "overall water-wastewater resource operational program" for preventing degradation of groundwater resources shall include implementation of a Salt Management Program to be prepared and submitted in accordance with Provision D.1.c.ii.

3. At least 30 days prior to the initial use of recycled water at each new site, the permittees and customer(s) shall jointly submit documentation acceptable to the Executive Officer that the proposed use, system design, and operation comply with this Order.

4. The use of recycled water shall not cause rising groundwater discharging to surface waters to impair surface water quality objectives or beneficial uses.

5. The use of recycled water shall be in accordance with the Salt Management Program approved by the Executive Officer to maintain or enhance ambient groundwater quality and shall not cause ground waters to exceed the following specific water quality objectives more than 10% of the time during one calendar year:

   Central Basin

TDS:	Ambient or 500 mg/l, whichever is lower
Nitrate:	45 mg/l (10 mg/l NO_3-N)

   Fringe Subbasins

TDS:	Ambient or 1000 mg/l, whichever is lower
Nitrate:	45 mg/l (10 mg/l NO_3-N)

   Upland and Highland Areas

   California Administrative Code, Title 22, and county standards

   Ambient water quality conditions at a proposed project area will be determined by Zone 7 at the time the project is proposed. Ambient conditions apply to the water bearing zone with the highest quality water.

6. All water recycling must be under the direct control of the permittees or their authorized customers. The permittees shall establish permitting, tracking, record keeping, monitoring and inspection procedures, subject to Executive Officer approval. These procedures shall clearly identify the responsibilities of each party as they relate to compliance with this Order.

7. Once DHS has approved revised regulations or guidelines for water recycling, the Executive Officer may authorize changes to the restricted and unrestricted water uses consistent with those regulations or guidelines.

8. Recycled water shall be applied in a manner which will minimize public contact or exposure to the water in compliance with the California DHS *Guidelines for the Use of Recycled Water.*

9. Irrigated areas, including recycled water impoundments and all equipment used in conjunction with recycled water use, shall be clearly identified with posted notices to the public.

10. Irrigation projects should be managed to conform with the California DHS *Guidelines for Use of Recycled Water for Irrigation and Impoundments* and *Guidelines for Worker Protection at Water Reclamation Use Areas* and the American Water Works Association, California-Nevada Section's *Guidelines for the Distribution of Non-potable Water.*

C. Recycled Water Quality Specifications:

1. Restricted Quality Recycled Water (Disinfected Secondary 23 MPN).

Recycled water shall be at all times an adequately oxidized, disinfected wastewater that meets the following quality limits prior to use:

a.	CBOD (5-day, 20 C)	40 mg/l daily maximum 25 mg/l monthly average
b.	Dissolved Oxygen	1.0 mg/l minimum
c.	Dissolved Sulfide	0.1 mg/l maximum
d.	Total coliform bacteria	At any point downstream of the disinfection facilities after adequate contact with disinfectant the median number of total coliform organisms shall not exceed 23 MPN/100mL as determined from the bacteriological results of the last seven days for which analyses have been completed, and the number of total coliform organisms shall not exceed 240 MPN/100ml in any sample.
e.	Total Dissolved Solids	In compliance with the Salt Management Plan approved by the Executive Officer.

2. Unrestricted Quality Recycled Water (Disinfected Tertiary).

Recycled water shall be an adequately oxidized, coagulated, clarified, filtered and disinfected water (as defined in latest version of Title 22 Section 60031-603335, California Administrative Code) that meets the following quality limits at all times:

a.	CBOD (5-day, 20 C)	40 mg/l daily maximum 25 mg/l monthly average
b.	Dissolved Oxygen	1.0 mg/l minimum
c.	Dissolved Sulfide	0.1 mg/l maximum
d.	Turbidity	2 NTU daily average filtered water turbidity and not exceeding 5 NTU at any time
e.	Total coliform bacteria	At any point downstream of the disinfection facilities after adequate contact with disinfectant the median number of total coliform organisms shall not exceed 2.2 MPN/100 Ml as determined from the bacteriological results of the last seven days for which analyses have been completed, and the number of total coliform organisms shall not exceed 23 MPN/100ml in any sample.
f.	Total Dissolved Solids	In compliance with the Salt Management Plan approved by the Executive Officer.

3. Groundwater Recharge Projects - Interim Limits.

The permittees shall assure that recycled water used for groundwater recharge shall be an adequately oxidized, filtered and disinfected water in compliance with the following proposed Title 22, Division 4, Chapter 3, Articles 1 and 5.1 limits at all times. The limits listed below shall be considered Interim Limits, pending final State approval of

the proposed Title 22 limits. In the event the proposed limits are modified during final State adoption, or due to future amendments, the most recent State approved limits shall apply and shall supersede the Interim Limits contained in this permit:

a. CBOD (5-day, 20 C) — 25 mg/l monthly average

b. Total Organic Carbon — 20 mg/l (90-day average), or as required by the following table if the recycled water contributed exceeds 20% of total recharge per project.

MAXIMUM ALLOWABLE TOC AFTER ORGANICS REMOVAL INTERIM LIMITS		
	Maximum TOC (mg/L)	
Recycled Water Contribution	Surface Spreading (Category I)	Direct Injection (Category IV)
0-20%	20	5
21-25%	16	4
26-30%	12	3
31-35%	10	3
36-45%	8	2
46-50%	6	2

c. Total Suspended Solids — 30 mg/l monthly average

d. Turbidity — 2 NTU average daily filtered water turbidity and not exceeding 5 NTU at any time

e. Total coliform bacteria — At any point downstream of the disinfection facilities after adequate contact with disinfectant the median number of total coliform organisms shall not exceed 2.2 MPN/100 mL as determined from the bacteriological results of the last seven days for which analyses have been completed, and the number of total coliform organisms shall not exceed 23 MPN/100ml in any sample.

f. Total Dissolved Solids — In compliance with the Salt Management Plan approved by the Executive Officer.

g. Total Nitrogen — 10 mg/l as nitrogen (annual average) unless the permittee demonstrates, to the satisfaction of the Executive Officer, that the standard can be consistently met prior to reaching the groundwater table.

h. Other Constituents — The level of general physical characteristics, radioactivity and the concentration of inorganic and organic compounds shall not exceed the maximum contaminant levels specified in Title 22, Chapter 15, Sections 64435, 64443, 64444.5 and 64473.

i. Operational Limitations by Project Category

INTERIM OPERATIONAL REQUIREMENTS FOR GROUNDWATER RECHARGE PROJECTS USING RECYCLED WATER				
Project Category	I	II	III	IV
Recharge Method	Surface Spreading			Direct Injection
Maximum Recycled Water Contribution	50%	20%	20%	50%
Depth to Groundwater at an initial percolation rate of 0.2 in./min. 0.3 in./min.	10 20	10 20	20 50	n/a n/a
Retention time underground (months)	6	6	12	12
Horizontal separation to the nearest potable supply well (feet)	500	500	1000	2000
Required treatment: Primary Secondary Filtration Disinfection Organics Removal	 X X X X X	 X X X X	 X X X	 X X X X X

D. Provisions

1. Technical Reports

Submittal of technical reports shall be in accordance with project staging (Phase I Group A (small-scale irrigation) and B (small-scale demonstration groundwater recharge), and Phase II Group C (valley-wide projects) as described in Finding 31 and scheduled in Attachment 2.

a. GROUP A PROJECTS

Prior to requesting approval for Phase I small-scale irrigation projects, the permittees shall submit the following reports for review and approval by the Executive Officer:

i. *Small-Scale Irrigation Project DHS Engineering Report.* The permittees shall prepare and submit an Engineering Report acceptable to the Executive Officer covering the proposed small-scale irrigation project uses pursuant to Title 22, Division 4, Chapter 3, Article 7, Section 60323 and the June 10, 1988 California DHS *Guideline for the Preparation of an Engineering Report on the Production, Distribution and Use of Recycled Water.* If recycled water will be used for applications requiring recycled water quality for unrestricted use (Disinfected Tertiary Recycled Water), the Engineering Report must demonstrate to the satisfaction of the Executive Officer that the treatment process can consistently meet the applicable Water Reuse Specifications. The Engineering Report shall fulfill the specific requirements in Attachment 3.

ii. *Interim Groundwater Monitoring and Management Program.* The permittees shall, pending development of a valley-wide SMP, initiate an interim program to further characterize the groundwater basin, with particular emphasis on monitoring potential impacts of Phase I projects on TDS concentration gradients throughout the basin. The program may make use of existing data, existing groundwater monitoring wells, monitoring programs for specific reuse sites, or additional data collection as may be necessary or as may be required by the Executive Officer.

The program shall include annual submittal of a summary report for the Executive Officer's review.

iii. *Customer Inspection Program.* The permittees shall prepare and submit a report detailing methods used to insure compliance with Title 22 requirements for monitoring of reuse sites as required in Recycled Water Use Limitation . The report should include Rules and Regulations to be distributed to customers, monitoring schedules, checklists, administrative procedures and formats for monthly reports to the Regional Board. The report should make clear the division of responsibilities of customers and the permittees in complying with all Title 22 requirements.

b. GROUP B PROJECTS

Prior to requesting approval for any Phase I small-scale demonstration groundwater recharge projects, the permittees shall submit the following report for review and approval by the Executive Officer:

i. *Phase I Small-Scale Demonstration Recharge Project DHS Engineering Report.* The permittees shall prepare and submit an Engineering Report acceptable to the Executive Officer covering the proposed Phase I demonstration recharge project uses pursuant to proposed Title 22, Division 4, Chapter 3, Article 5.1, Section 60320.07 and per the May 10, 1990 proposed *Guidelines for the Preparation of an Engineering Report on the Proposed Use of Recycled Municipal Wastewater for Groundwater Recharge,* including the proposed *Guidelines for the Monitoring of Groundwater Recharge Projects.* The Engineering Report shall fulfill the specific requirements in Attachment 3.

c. GROUP C PROJECTS

Approval of Phase II valley-wide irrigation or recharge projects is contingent upon Executive Officer review and approval of the following technical reports. Additional projects identified subsequent to Phase II report submittal can also be authorized subject to Executive Officer review and approval.

i. *Valley-Wide Water Recycling Engineering Report.* The report shall constitute a complete plan for the management of recycled water and its impacts on water resources throughout the Livermore-Amador Valley. The report shall contain operating procedures and mitigation measures, and a schedule for implementation, designed to insure that groundwater resources are not degraded as a result of the valley-wide use of recycled water. The report shall also address the impact of disposal of brine (from the demineralization process) on the quality of wastewater discharged to San Francisco Bay via LAVWMA and EBDA facilities. The Engineering Report shall fulfill the specific requirements in Attachment 3.

ii. *Salt Management Program (SMP).* The permittees shall prepare and submit a SMP, acceptable to the Executive Officer, to insure that the overall impact of permitted water recycling projects does not degrade groundwater

resources. The program will contain monitoring, management and mitigation elements necessary to achieve salt management goals defined in Zone 7 policies and in the Basin Plan. At the permittee's option, the SMP may be incorporated into the Engineering Report or other regulatory documentation.

The SMP shall include a comprehensive groundwater monitoring program. Gathering of data under the monitoring program shall serve three objectives: (1) evaluation of effects of each project on local groundwater and (2) evaluating overall trends in groundwater quality throughout the basin and monitoring any effects of water recycling programs on basin-wide groundwater quality and (3) enhancing understanding of the hydrogeology of the basin.

The Salt Management Program shall fulfill the specific requirements listed in Attachment 3.

2. Potential future projects which may involve the use of ephemeral or year-round streams or other waters of the State for recycled water conveyance or groundwater recharge are not authorized under this permit. The permittees are directed to apply for an NPDES permit if they desire to implement such projects in the future.

   Application for an NPDES permit will need to be supported by technical reports covering, at a minimum, the following issues:

   a. Compliance with the California *Inland Surface Waters Plan* and USEPA policies regarding effluent-dominated ecosystems.

   b. Title 22 requirements for an engineering report and monitoring plan.

   c. Engineering and operating plans for watercourses and impoundments.

   d. CEQA compliance.

   e. NPDES permit application.

3. Development of water recycling plans and facilities must comply with CEQA. Any of the above reports may be combined with CEQA documentation when a united document would facilitate regulatory review.

4. Following Executive Officer approval of the Salt Management Program (SMP) required to be developed in Provision D.1.c.ii. of this Order, the requirements prescribed by this Order will supersede the requirements prescribed by Order No. 90-102 (Livermore and Caltrans Water Reclamation Requirements) and applicable requirements of Order No. 91-042 (Region 2 Water Reuse Requirements). In the interim, recycled water irrigation may continue at the Las Positas Golf Course, Livermore Municipal Airport and Livermore Water Reclamation Plant subject to the requirements of Order No. 90-102 and at existing sites operating subject to Order No. 91-042.

5. Following acceptance by the Executive Officer of the SMP, all existing and Phase I projects will be considered part of the Phase II valley-wide water recycling scenario, and subject to all requirements of the SMP.

6. The permittees and customers shall maintain in good working order and operate as efficiently as possible any facility or control system installed to achieve compliance with the water reuse requirements.

7. The permittees shall discontinue delivery of recycled water to customers during any period in which it has reason to believe that the limits for that use as specified in this section of the Order are not being met. The delivery of recycled

water shall not be resumed until all conditions which caused the limits to be violated have been corrected.

8. The permittees shall comply with the **Self-Monitoring Program** as adopted by the Board and as may be amended by the Executive Officer. Customers are responsible for submitting on-site observation reports to the permittees, who will compile and file self-monitoring reports with the Regional Board.

9. The permittees and customers shall permit the Regional Board or its authorized representative in accordance with California Water Code Section 13267(c):

   a. Entry upon premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order.

   b. Access to and copy of, at reasonable times, any records that must be kept the conditions of this Order.

   c. Inspection at reasonable times of any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order.

   d. To photograph, sample, and monitor at reasonable times for the purpose of assuring compliance with this Order.

10. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:

   a. Violation of any term or condition contained in this Order.

   b. Obtaining this Order by misrepresentation, or failure to disclose fully all relevant facts.

   c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized reuse.

   d. Endangerment to public health or environment that can only be regulated to acceptable levels by Order modification or termination.

11. The Board will review this Order periodically and may revise the requirements when necessary.

I, Steven R. Ritchie, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on December 15, 1993.

Steven R. Ritchie
Executive Officer

Attachments:

1. Water Recycling Program Compliance with Basin Plan and Zone 7 Policies
2. Implementation Schedule
3. Technical Report Workplans
4. Self-Monitoring Program

ATTACHMENT 1

RECYCLING PROGRAM COMPLIANCE SUMMARY FOR ZONE 7 POLICIES AND BASIN PLAN

Excerpt from

LIVERMORE-AMADOR VALLEY WATER RECYCLING STUDY

(Brown and Caldwell Consultants/EOA, Inc./Todd Engineers, 1992)

Recycling Program Compliance Summary for Zone 7 Policies and Basin Plan

Policy, Regulations, or Guidelines	Response
c. The application point is in the fringe sub-basin or upland and highland area, and it can be shown that the project, because of its size and location, together with other possible projects in the area, will not cause adverse water quality effects either locally or in the Central Basin or Niles Cone areas. The site specific study will have to demonstrate that the percolate cannot reasonably be expected over time to move, either directly or indirectly, into the Central Basin or Niles Cone and degrade or pollutant ground water. All other State and Federal standards must be met.	As discussed in response to Policy A3b, appropriate recycled water TDS limits would be developed on a base-by-case basis as part of the overall recycling program and salt management plan. An approved monitoring and management plan would be developed for each project allowing potential problems to be promptly detected and corrective actions taken. A technical report covering all the topics identified in the last sentence of Policy A5 will have to be prepared, submitted, and approved by the RWQCB prior to issuance to Waste Discharge Requirements for nonpotable recycling. A detailed engineering report and monitoring program are required by DHS as part of the review and approval process for groundwater recharge projects.
Policies b and c above allow some degradation only when beneficial reuse of wastewater is proposed, as permitted in State Board Resolution No. 68-16 "Statement of Policy With Respect to Maintaining High Quality Waters in California". Land application will be discouraged in the Central Basin where salts, trace organics, and viruses may cause problems.	Only beneficial reuse of wastewater is being proposed. Proposed recycling projects can be managed to comply with the state non-degradation policy (Resolution 68-16) and maintain full beneficial uses of the groundwater. Trace organics and viruses will be reduced to below levels of concern by definition through compliance with Title 22 recharge requirements. Overall TDS loading to the central basin can be managed with a goal of no net increase in salt loading through control of the relative qualities, quantities, types, and locations of recycling practiced in the Valley and/or through control of natural salt loading sources.
Policy A4. If demineralization is proposed the effluent should, is physically, financially and institutionally feasible, be used to replace poor quality wastewater being used for irrigation.	The Livermore Los Positas golf course irrigation is the only significant existing use of recycled water for irrigation. It is arguable whether this is "poor" quality wastewater or not. It does exceed the 250 mg/L TDS objective and contains approximately 20 mg/L NO3-N. Cost-effectiveness and groundwater quality management criteria would be developed to evaluate on a case by case basis the appropriateness of irrigating with demineralized water. Higher quality water could wind up being used for irrigation than being provided to consumers (through recharge).

Source: Livermore-Amador Valley Water Recycling Study (1992)

Recycling Program Compliance Summary for Zone 7 Policies and Basin Plan

Policy, Regulation, Prohibition or Guideline	Response
BASIN PLAN	
Prohibition 1. Any wastewater which has particular characteristics of concern to beneficial uses at any point at which the wastewater does not receive a minimum initial dilution of at least 10:1, or into any nontidal water, dead-end slough, similar confined waters, or any immediate tributaries thereof.	
Waste discharges will contain some levels of pollutants regardless of treatment. This prohibition will require that these pollutants, when of concern to beneficial uses, be discharged away from areas of minimal assimilative capacity such as nontidal waters and dead-end sloughs. This prohibition will accomplish the following:	
a. Provide an added degree of protection from the continuous effects of waste discharge.	Discharges would comply with receiving water quality objectives.
b. Provide a buffer against the effects of abnormal discharges caused by temporary plant upsets or malfunctions.	Complied with through plant reliability and redundancy features.
c. Minimize public contact with undiluted wastes.	Tertiary effluent meets Title 22 requirements for full body contact recreation,
d. Reduce the visual (aesthetic) impact of waste discharges.	Tertiary effluent appears the same as potable water.
Exceptions to Basin Plan Prohibition above will be considered for discharges where:	
a. An inordinate burden would be placed on the discharger relative to beneficial uses protected and an equivalent level of environmental protection can be achieved by alternate means, such as alternative discharge site, a higher level of treatment, and/or improved treatment reliability.	This exception is more appropriate for stream discharge projects such as to San Ramon Creek than for stream recharge or conveyance projects. A cost effectiveness evaluation of stream discharge versus export would show the extent of inordinate burden imposed. If no recharge is involved, tertiary 2.2 MPN effluent may be a high enough level of treatment depending on nutrient and ISWP requirements.
b. A discharge is approved as part of a reclamation project.	Discharges would be part of an approved reclamation project.

Source: Livermore-Amador Valley Water Recycling Study (1992)

ATTACHMENT 2

IMPLEMENTATION SCHEDULE

No Group A, B, or C projects are authorized to commence operation until receiving Executive Officer approval of the respective Provision D.1 technical reports summarized below. Group A reports shall be submitted a minimum of 90 days before the first proposed Group A project start-up date. Group B and C reports shall be submitted no later than two and three years, respectively, following startup of the first Group A project. Salt Management Program implementation shall begin no later than five years after startup of the first Group A project.

As noted in Provision D.4 of this Order, recycled water irrigation of areas permitted under Order No. 90-102 and Order No. 91-042 may continue on an interim basis under the terms of those Orders. Those Orders will be superseded by the conditions of this Order following submittal and Executive Officer approval of the Provision D.1.c.ii Salt Management Program.

TIME SCHEDULE

Finding 31 Recycled Water Project Group	Provision D.1 Technical Report Submittal Requirements for Project Group Approval	Submittal Dates Following Start-up of First Group A Project
GROUP A - Phase I Small-Scale Irrigation Projects	DHS Engineering Report; Interim Groundwater Monitoring and Management Program; CEQA documentation	(90 days prior to first proposed Group A project start-up)
GROUP B - Phase I Small-Scale Demonstration Groundwater Recharge or Other Salt Management Projects	DHS Groundwater Recharge or other Salt Management Project Engineering Report; CEQA documentation	Two years
GROUP C - Phase II Valley-wide Water Recycling Projects	Salt Management Program; DHS Engineering Report; CEQA documentation	Three years
	Implement Salt Management Program to achieve 100% mitigation of impacts on groundwater quality from water recycling	Five years

2. REQUIREMENTS FOR PHASE I SMALL-SCALE IRRIGATION PROJECT ENGINEERING REPORTS (GROUP A PROJECTS)

In addition to the elements listed above, engineering reports for irrigation projects shall include the following information:

a. Known local groundwater hydrology

b. Known groundwater quality data

c. Current land uses and irrigation practices

d. An estimate of additional salt loading due to irrigation with recycled water

e. Site-specific groundwater monitoring plan.

3. REQUIREMENTS FOR PHASE I SMALL-SCALE GROUNDWATER RECHARGE PROJECT ENGINEERING REPORTS (GROUP B PROJECTS)

Engineering reports shall consist of a thorough investigation and evaluation of the groundwater recharge project, and shall assess impacts on the existing and potential uses of the affected groundwater basin. The reports shall identify proposed means for achieving compliance with requirements regarding source control, treatment performance standards, recharged water quality, maximum recycled water contribution, minimum depth-to-groundwater, minimum retention time underground, horizontal separation, recharge-water monitoring and groundwater monitoring. The reports shall include:

a. An engineering plan of the reclamation plant, transmission facilities, spreading basins and monitoring wells.

b. A detailed description of the proposed facilities.

c. Hydrogeologic data. For a demonstration-scale surface-spreading recharge projects of one MGD or less, the report shall identify groundwater quantity, quality and flow patterns for the immediate area of recharge and for one mile down gradient. The study shall identify the zones within the receiving aquifer where the maximum allowed recycled water contribution is not met and in which the provided organics removal is not sufficient for the recycled water contribution to the groundwater.

d. Identification of all wells that will be affected by the proposed project. The study shall specify which wells are subject to the highest recycled water contribution and shortest recycled water retention time.

e. Quantitative descriptions of the soil, soil layers, infiltration rates, aquifer transmissivity, groundwater movement, historic depth-to-groundwater for the recharge area.

B. SALT MANAGEMENT PROGRAM

Prior to implementation of Phase II valley-wide water recycling projects, the permittees shall submit a Salt Management Plan (SMP) for approval by the Executive Officer. The SMP will insure that water recycling projects implemented under the valley-wide water recycling program will not degrade the Livermore-Amador Valley's groundwater resource or surface waters.

The SMP will be based on the concept that the effect of each individual project on the Central Basin groundwater resource is best assessed in the context of the cumulative effects of all such projects, as well as groundwater management policies and natural conditions. The relative geological homogeneity of the Central Basin lends itself to a mass-balance approach for assessing cumulative impacts.

For a planning horizon of 10 years, the SMP will define a project or set of projects which will:

a. fully mitigate the effects of salt loading due to water recycling on the Central Basin groundwater resource and

b. minimize the current trend toward increasing Central Basin groundwater salinity due to subsurface groundwater inflow, natural recharge, water imports and water recycling.

The SMP will also provide a technical basis for estimating and allocating salt loading or removal among existing sources and new projects. Accordingly, the SMP must include development of a basin-wide model of salt sources and sinks. Numerical factors, representing (for example) connectivity between groundwater basins and effects of filtering through the soil mantle, will be estimated using the preparer's best professional judgement.

The SMP will also provide information needed to support the DHS engineering report for full-scale groundwater recharge projects.

The SMP will include the following tasks:

1. Define Basin Characteristics

   a. Review existing information (including DWR studies)

   b. Evaluate connectivity between the fringe subbasins and the Central Basin.

   c. Characterize mixing in the Central Basin

   d. Obtain site-specific hydrogeologic information to evaluate local impacts and provide data for design. Needed information includes stratigraphy, horizontal flow barriers (e.g. faults) and hydraulic conductivity.

c. Integrate monitoring for salt management with other required project monitoring to allow a periodic comprehensive evaluation of the status and trends of groundwater quality throughout the basin.

ATTACHMENT 4

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

Alameda County Flood Control
and Water Conservation District, Zone 7
City of Livermore
Dublin San Ramon Services District

("Permittees")

Order No. 93-159

A GENERAL

Reporting responsibilities of waste dischargers are specified in Sections 13255(a), 13267(b), 13268, 13383, and 13387(b) of the California Water Code and this Regional Board's Resolution No. 73-16.

The principal purposes of a monitoring program by a waste discharger, also referred to as self-monitoring program, are:

1) To document compliance with waste discharge requirements and prohibitions established by this Regional Board; and

2) To facilitate self-policing by the waste discharger in the prevention and abatement of pollution arising from wastewater reclamation.

B. RECYCLED WATER AND GROUNDWATER SAMPLING AND ANALYSIS

1. Following Executive Officer approval of the Salt Management Program, existing effluent and groundwater quality monitoring requirements for the Las Positas Golf Course, Livermore Municipal Airport and Livermore Water Reclamation Plant under Order No. 90-102, and for irrigation projects operating under Order No. 91-42, shall be superseded by the monitoring requirements of this Order.

2. The Executive Officer shall modify this Self-Monitoring Program, as needed, to include additional site specific monitoring requirements for new Group A, B, and C projects. The need for, and scope of, additional monitoring will be developed following review of recommendations in the Provision D.1 Engineering Reports and other technical reports to be submitted by the permittees.

A MONITORING OF REUSE SITES

1. This self-monitoring program is applicable during periods when wastewater is being recycled.

2. Each recycled water site shall, during periods when recycled water is used, have the use area inspected weekly for the following:

   a. Evidence of recycled water escaping any irrigation site through surface runoff or airborne spray. (Show affected area on a sketch.)

   b. Presence or absence, characterization, source, and distance of travel of odors of recycled water origin.

   c. Evidence of prolonged ponding of recycled water in the irrigation site as a result of excessive spray.

   d. Adequate posting of warning signs or notices to inform public of the use of recycled water for irrigation.

   e. Maintenance of the required buffer distance from areas to be protected.

   f. Evidence of direct spraying of recycled water on streams, passing vehicle, buildings, domestic water facilities, or food handling facilities.

3. The Permittees shall conduct periodic random inspections of selected Customers to insure compliance with the water recycling specifications. Inspections shall be performed when recycled water is being used.

D. REPORTS TO BE FILED WITH THE REGIONAL BOARD

Reports shall be accompanied by a letter of transmittal. The letter shall include a discussion of water recycling related violations found during the reporting period and actions taken for correcting violations. The letter shall contain a statement by the reporting official, under penalty of perjury, that to the best of the signer's knowledge the report is true and correct.

1. Monthly Self-Monitoring Reports

Written reports shall be prepared for each month and shall be received by the Regional Board by the fifteenth day of the following month. The reports shall be comprised of the following:

a. Tabulation of SMR recycled water analyses.

b. A list of new authorized recycled water Customers, including the name of customers, application, source and gallons per day authorized.

c. A summary of recycled water use by each Customer during the month, including the source of recycled water used.

d. Tabulation of inspections and observations and reuse sites, including Customer's inspections and random inspections by the Permittees.

e. A summary of effluent violations related to recycled water use, violations found during inspection of reuse sites, corrective actions taken and any changes to, or revoking of Customer authorizations.

f. For the monthly reports for March, June, September and December, a tabular summary of groundwater monitoring data for the previous quarter.

g. An update regarding development of the water recycling program, including planning, design and construction of facilities, preparation of required reports and technical documents and progress toward regulatory approvals.

2. Annual Report

An annual report for each calender year shall be submitted to the Board by January 30 of the following year. The report should include:

a. A summary of information in the monthly reports.

b. A comprehensive discussion of the progress and results of the valley-wide water recycling program and the Salt Management Program. The discussion shall include the following components:

i. Analysis of trends in groundwater monitoring data.

ii. Calculation of the impact of each project on the basin-wide salt balance, and a summary of estimated salt sources and sinks for the year.

iii. Status of current and future projects identified in the May 1992 Water Recycling Study, the Engineering Report for full-scale valley-wide recycling and the Salt Management Plan.

iv. Evaluation of progress toward meeting the long-term water-quality objectives set by the Salt Management Plan.

I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing Self-Monitoring Program is effective on the date shown below and may be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the Permittees, and revisions will be ordered by the Executive Officer.

STEVEN R. RITCHIE
Executive Officer

December 15, 1993